

## Today's Topics:

## NASA Prediction Bulletins

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Date: Sat, 11 Nov 89 20:59:58 EST  
From: tkelso@afit-ab.arpa (TS Kelso)  
Subject: NASA Prediction Bulletins

The most current orbital elements from the NASA Prediction Bulletins are carried on the Celestial RCP/M, (513) 427-0674, and are updated several times weekly. Documentation and tracking software are also available on this system. As a service to the satellite user community, the most current of these elements are uploaded weekly to sci.space. This week's elements are provided below. The Celestial RCP/M may be accessed 24 hours/day at 300, 1200, or 2400 baud using 8 data bits, 1 stop bit, no parity.

## - Current NASA Prediction Bulletins #599 -

## Alouette 1

1 00424U 62B-A 1 89298.08291942 .000000334 00000-0 39056-3 0 2417  
2 00424 80.4656 157.8399 0023000 155.2232 205.0031 13.67220667350568

## SOLRAD R/B

1 00727U 64001 A 89305.07740594 .000000304 00000-0 26257-3 0 3152  
2 00727 69.9038 162.6827 0015915 277.2957 82.6310 13.93610655312167

## Cos 185 R/B

1 03019U 67104 B 89305.37135633 .00011764 00000-0 80088-3 0 4831  
2 03019 64.0698 38.4497 0203163 210.6270 148.2851 14.91327925125523

## ATS 3

1 03029U 67111 A 89300.25725662 -.000000074 00000-0 99999-4 0 2630  
2 03029 12.9069 23.1025 0016795 201.7829 158.1132 1.00272546 80469

## Cosmos 398

1 04966U 71 16 A 89305.85587296 .00067235 15552-5 41771-3 0 2166  
2 04966 51.5144 72.5433 2443627 91.5829 296.3493 10.68860700566978

## Starlette

1 07646U 89297.57791331 -.000000012 00000-0 37922-4 0 9951  
2 07646 49.8237 8.1317 0206386 133.2297 228.6033 13.82123198743196

## LAGEOS

1 08820U 76039 A 89306.05124533 .000000005 00000-0 00000 0 0 9121  
2 08820 109.8524 277.3043 0044756 286.7736 72.8083 6.38664400 59436

## GOES 2

1 10061U 77048 A 89303.39501513 -.000000004 00000-0 00000 0 0 3217  
2 10061 7.4911 66.5804 0007654 172.3567 187.5966 1.00274128 6737

## GPS-0001

1 10684U 78020 A 89303.07790317 .000000010 00000-0 99999-4 0 2604  
2 10684 63.6888 96.6396 0112715 197.7228 161.8944 2.00559218 71230

## GPS-0002

1 10893U 78 47 A 89303.04179173 -.000000027 00000-0 00000 0 0 521

2 10893 64.4748 337.5242 0156092 26.7665 334.1009 2.00552391 84051  
 GOES 3  
 1 10953U 78062 A 89304.44075520 .00000084 00000-0 99999-4 0 7632  
 2 10953 6.3708 69.2195 0007176 237.8896 121.9794 1.00284301 2307  
 SeaSat 1  
 1 10967U 78064 A 89304.25161251 .00001503 00000-0 56997-3 0 1861  
 2 10967 108.0082 207.9412 0002500 277.6037 82.4820 14.34984083593609  
 GPS-0003  
 1 11054U 78093 A 89301.35481151 -.00000026 00000-0 00000 0 0 1144  
 2 11054 64.0103 333.9591 0055429 120.4626 240.1534 2.00563856 81032  
 GPS-0004  
 1 11141U 89295.96680370 0.00000010 0 2240  
 2 11141 63.6087 96.7840 0055890 319.5668 40.0329 2.00567263 79622  
 NOAA 6  
 1 11416U 79 57 A 89306.00770516 .00001491 00000-0 63842-3 0 9208  
 2 11416 98.5170 299.1671 0012973 69.2393 291.0101 14.26131037537540  
 GPS-0005  
 1 11690U 89295.10446709 0.00000011 0 8620  
 2 11690 64.0916 98.7609 0108875 203.1569 156.3640 2.00558531 85466  
 Solar Max  
 1 11703U 89311.16023248 0.00265965 96471-3 0 1770  
 2 11703 28.4976 331.3996 0002668 184.1278 175.8118 15.86686516542258  
 GPS-0006  
 1 11783U 80 32 A 89305.39752741 -.00000026 00000-0 00000 0 0 9837  
 2 11783 63.8136 333.4547 0143045 61.6052 299.8980 2.00570776 69751  
 GOES 4  
 1 11964U 80 74 A 89301.89291395 .00000083 00000-0 00000 0 0 954  
 2 11964 5.8378 71.9911 0033622 101.6680 258.6996 0.99226958 3356  
 GOES 5  
 1 12472U 81049 A 89305.28632127 -.000000247 00000-0 99999-4 0 7681  
 2 12472 2.8901 78.8099 0002104 191.1548 168.7804 1.00258223 29968  
 SME  
 1 12887U 81100 A 89306.10189536 .00023542 00000-0 69850-3 0 3569  
 2 12887 97.6727 337.1775 0003206 95.7738 264.3881 15.34816256446264  
 Meteor 2-08  
 1 13113U 82 25 A 89299.42906849 .000000310 00000-0 26846-3 0 6726  
 2 13113 82.5394 314.4472 0017005 57.1928 303.0857 13.84066504383391  
 Salyut 7  
 1 13138U 89306.32756272 0.00014459 28315-3 0 8494  
 2 13138 51.6094 358.2784 0000875 32.8150 327.3091 15.47640562429548  
 LandSat 4  
 1 13367U 82 72 A 89305.97237550 -.000000151 00000-0 -28539-4 0 1534  
 2 13367 98.1978 7.5725 0003633 118.0060 242.1480 14.57112720388214  
 Meteor 2-09  
 1 13718U 82116 A 89303.04253087 .000000650 00000-0 33526-3 0 8295  
 2 13718 81.2473 149.6253 0056097 336.4786 23.3808 14.13349014354603  
 IRAS  
 1 13777U 83 4 A 89303.37435184 .000000068 00000-0 59810-4 0 6907

2 13777 99.0347 138.5904 0012369 300.5314 59.4627 13.98663201 14812  
 Cosmos 1447  
 1 13916U 83 21 A 89303.73750311 .00000209 00000-0 21012-3 0 6575  
 2 13916 82.9488 181.6647 0039928 58.9382 301.5682 13.73967936331163  
 TDRS 1  
 1 13969U 83 26 B 89302.30216588 -.00000208 00000-0 00000 0 0 8632  
 2 13969 3.9048 67.7560 0004643 133.4191 226.5781 1.00276044 90761  
 GOES 6  
 1 14050U 83 41 A 89300.50022297 .00000115 00000-0 00000 0 0 282  
 2 14050 1.6392 80.4984 0002069 181.0162 179.2984 1.00286459 7936  
 OSCAR 10  
 1 14129U 83 58 B 89306.03769871 .00000077 00000-0 00000 0 0 4367  
 2 14129 25.9223 236.2566 6028884 89.6677 334.8537 2.05879726 20057  
 GPS-0008  
 1 14189U 83 72 A 89303.99086555 .00000009 00000-0 99999-4 0 6729  
 2 14189 63.2507 95.0862 0139322 215.2960 143.7651 2.00563961 46169  
 Meteor 2-10  
 1 14452U 83109 A 89304.03116500 .00000999 00000-0 42306-3 0 7822  
 2 14452 81.1654 157.4005 0096022 65.2455 295.8667 14.22397527311854  
 LandSat 5  
 1 14780U 84 21 A 89306.00079170 .00002463 00000-0 55634-3 0 9660  
 2 14780 98.1512 5.4821 0003028 146.3257 213.8203 14.57124346301638  
 UOSAT 2  
 1 14781U 84 21 B 89305.22395775 .00002795 00000-0 53869-3 0 5376  
 2 14781 97.9872 359.9735 0011908 249.0763 110.8959 14.64251792302599  
 LDEF  
 1 14898U 89307.09196360 0.00075302 76599-3 0 368  
 2 14898 28.5052 270.3279 0000164 221.7761 138.3110 15.63697076313117  
 GPS-0009  
 1 15039U 84 59 A 89303.05424526 .00000008 00000-0 00000 0 0 7530  
 2 15039 63.0532 94.3582 0017705 250.0465 109.7697 2.00563657 39423  
 Cosmos 1574  
 1 15055U 84 62 A 89304.87190235 .00000220 00000-0 22525-3 0 7963  
 2 15055 82.9542 230.5674 0026008 238.8370 121.0222 13.73286408268730  
 Meteor 2-11  
 1 15099U 84 72 A 89303.89168536 .00000223 00000-0 19206-3 0 9745  
 2 15099 82.5260 258.4299 0011819 214.5588 145.4802 13.83720564268886  
 GPS-0010  
 1 15271U 84 97 A 89301.45800773 -.00000027 00000-0 00000 0 0 7211  
 2 15271 63.3158 333.2709 0102874 321.7155 37.6252 2.00569382 36501  
 Cosmos 1602  
 1 15331U 89307.67341348 0.00004388 62618-3 0 1086  
 2 15331 82.5418 209.6328 0024130 354.6052 5.4969 14.76353073274799  
 NOAA 9  
 1 15427U 84123 A 89304.03231234 .00000782 00000-0 44593-3 0 4483  
 2 15427 99.1560 293.7436 0014606 294.1832 65.7812 14.12244370251635  
 Meteor 2-12  
 1 15516U 85 13 A 89304.72039137 .00000586 00000-0 51544-3 0 1275

2 15516 82.5379 196.1547 0017898 89.9652 270.3540 13.84205164239941  
Cosmos 1686  
1 16095U 85 86 A 89306.00472150 .00008912 00000-0 17795-3 0 4013  
2 16095 51.6127 359.8709 0001796 21.8109 338.4102 15.47628786230594  
GPS-0011  
1 16129U 85 93 A 89304.60684529 .00000009 00000-0 00000 0 0 3608  
2 16129 63.7890 95.0807 0121144 149.8383 210.8618 2.00561978 29771  
Meteor 3-1  
1 16191U 85100 A 89304.96630584 .00000043 00000-0 99999-4 0 8712  
2 16191 82.5461 139.0528 0019358 320.8672 39.1077 13.16881568193522  
Meteor 2-13  
1 16408U 85119 A 89304.94467406 .00000219 00000-0 18701-3 0 5423  
2 16408 82.5337 110.8536 0015417 281.4232 78.5200 13.84229333194478  
Mir  
1 16609U 89306.33658130 -.00058707 -84805-3 0 1782  
2 16609 51.6251 30.1226 0006166 262.2505 97.7229 15.55607235212717  
SPOT 1  
1 16613U 86 19 A 89305.90776074 .00001095 00000-0 53201-3 0 6532  
2 16613 98.7265 18.6509 0001524 116.1025 244.0414 14.20036486 31673  
Meteor 2-14  
1 16735U 86 39 A 89305.01460390 .00000240 00000-0 20574-3 0 3335  
2 16735 82.5383 137.6931 0015116 353.4301 6.6656 13.83985538173380  
Cosmos 1766  
1 16881U 86 55 A 89305.91375422 .00003647 00000-0 52390-3 0 7840  
2 16881 82.5196 270.6018 0023136 17.2921 342.9090 14.76056126175602  
EGP  
1 16908U 86 61 A 89304.02055883 -.00000016 00000-0 18794-3 0 1554  
2 16908 50.0104 240.5066 0010893 330.4310 29.5907 12.44381948146326  
FO-12  
1 16909U 86 61 B 89304.07884460 -.00000025 00000-0 99999-4 0 1749  
2 16909 50.0168 240.6055 0010698 329.6461 30.3754 12.44402062146327  
NOAA 10  
1 16969U 86 73 A 89304.05683889 .00000851 00000-0 39304-3 0 2984  
2 16969 98.6277 331.9083 0013016 213.6616 146.3736 14.23248752162013  
Meteor 2-15  
1 17290U 87 1 A 89304.74547094 .00000377 00000-0 33102-3 0 3037  
2 17290 82.4647 44.2395 0011627 240.7728 119.2270 13.83784008142502  
MOS-1  
1 17527U 87 18 A 89305.90059221 .00000345 00000-0 28226-3 0 2997  
2 17527 99.1355 16.0921 0000767 84.2118 275.9198 13.94871102137579  
GOES 7  
1 17561U 87 22 A 89305.16701663 -.00000075 00000-0 00000 0 0 3620  
2 17561 0.0678 62.2244 0000584 214.9119 82.8977 1.00207676 3134  
Kvant  
1 17845U 87 30 A 89305.95052698 .00037196 00000-0 53607-3 0 8980  
2 17845 51.6228 32.0500 0004972 254.0696 102.4781 15.55627625148926  
DMSP B5D2-3  
1 18123U 87 53 A 89305.04284494 .00000421 00000-0 24220-3 0 4139

2 18123 98.8191 133.7049 0014043 314.3101 45.6909 14.13638542122167  
 RS-10/11  
 1 18129U 87 54 A 89305.86325931 .00000244 00000-0 25747-3 0 9287  
 2 18129 82.9235 136.4791 0012688 34.6863 325.5123 13.72019893118271  
 Cosmos 1867  
 1 18187U 87 60 A 89305.88304642 .00000658 00000-0 29230-3 0 9950  
 2 18187 65.0147 358.2264 0016743 252.4382 107.4947 14.29439402120808  
 Meteor 2-16  
 1 18312U 87 68 A 89304.95372454 .00000219 00000-0 18868-3 0 3302  
 2 18312 82.5508 111.1776 0011052 168.8548 191.2855 13.83535510111422  
 Meteor 2-17  
 1 18820U 88 5 A 89305.15411318 .00000349 00000-0 30290-3 0 1668  
 2 18820 82.5470 171.7147 0015414 246.0980 113.8566 13.84235012 88633  
 DMSP B5D2-4  
 1 18822U 88 6 A 89305.03811243 .00000848 00000-0 40833-3 0 3131  
 2 18822 98.6730 183.4279 0006060 204.2889 155.8039 14.21010120 90412  
 AO-13  
 1 19216U 89290.09120728 0.00000482 37172+0 0 508  
 2 19216 57.1143 186.3015 6814391 213.3923 73.7401 2.09694922 10298  
 OKEAN 1  
 1 19274U 88 56 A 89305.88317497 .00003708 00000-0 53815-3 0 5474  
 2 19274 82.5202 9.2596 0023532 141.3901 218.9163 14.75595646 71380  
 Meteor 3-2  
 1 19336U 88 64 A 89304.87849350 .00000391 00000-0 99999-3 0 2934  
 2 19336 82.5408 78.9584 0014841 158.0467 202.1238 13.16865410 60909  
 NOAA 11  
 1 19531U 88 89 A 89305.75811054 .00000997 00000-0 57277-3 0 1569  
 2 19531 98.9526 249.2205 0011862 201.2890 158.7814 14.11239963 56884  
 TDRS 2  
 1 19548U 88 91 B 89296.38658310 .00000132 00000-0 99999-4 0 458  
 2 19548 0.0140 233.3160 0003444 320.0742 166.6198 1.00277209 3070  
 Cosmos 2001  
 1 19796U 89 11 A 89305.39465651 -.00000978 00000-0 10112-1 0 2506  
 2 19796 62.8855 122.6199 7201869 319.5129 4.8931 2.00630810 5236  
 GPS-0014  
 1 19802U 89281.68171902 0.00000016 10000-3 0 544  
 2 19802 55.0882 207.3326 0063992 158.0327 202.2596 2.00559422 4704  
 Meteor 2-18  
 1 19851U 89 18 A 89305.28346444 .00000117 00000-0 99999-4 0 911  
 2 19851 82.5229 50.0278 0012701 285.2811 74.7256 13.83860525 34047  
 TDRS 3  
 1 19883U 89 21 B 89290.04165570 -.00000234 00000-0 99999-4 0 333  
 2 19883 0.0328 263.4283 0006148 337.4358 118.9390 1.00261505 1455  
 GPS-0013  
 1 20061U 89280.87090057 -.00000030 0 355  
 2 20061 54.6429 26.0899 0082887 167.3155 192.9165 2.00568920 2430  
 Nadezhda  
 1 20103U 89 50 A 89305.09641196 .00000198 00000-0 20034-3 0 440

2	20103	82.9575	93.1318	0037406	315.7615	44.0552	13.73518536	16400	
GPS-0015									
1	20185U	89 64	A	89298.79060532	.000000015	00000-0	99999-4 0	212	
2	20185	54.9529	207.5354	0025372	139.3926	220.8319	2.00572367	5990	
Progress M									
1	20191U	89 66	A	89306.01470164	.00046828	00000-0	67202-3 0	631	
2	20191	51.6251	31.7285	0005169	266.7121	89.4612	15.55636076	11070	
Soyuz TM-8									
1	20218U	89 71	A	89306.01471057	.00037701	00000-0	54318-3 0	576	
2	20218	51.6283	31.7314	0005349	253.7746	102.4478	15.55628138	8923	
Cosmos 2038									
1	20232U			89307.06014179	0.000000004			0	234
2	20232	82.5747	135.6619	0010825	276.3117	83.6741	12.65098703	6273	
Cosmos 2039									
1	20233U			89281.73787093	0.000000004			0	119
2	20233	82.5823	151.9023	0015723	329.1459	30.8712	12.65887701	3078	
Cosmos 2040									
1	20234U			89307.09151014	0.000000004			0	194
2	20234	82.5882	135.8634	0004530	68.7531	291.4042	12.62285197	6267	
Cosmos 2041									
1	20235U			89299.01282557	0.000000004			0	161
2	20235	82.5844	140.8923	0008466	305.5606	54.4700	12.64510000	5263	
Cosmos 2042									
1	20236U			89307.10818638	0.000000004			0	190
2	20236	82.5796	135.7400	0004228	272.3400	87.7205	12.63875175	6286	
Cosmos 2043									
1	20237U			89292.00979109	0.000000004			0	149
2	20237	82.5780	145.4095	0002358	6.9061	353.2063	12.63091135	4360	
1989 074G									
1	20238U			89306.41478462	0.000000004			0	136
2	20238	82.5897	136.7280	0041603	94.7788	265.8049	12.55209541	6150	
1989 077A									
1	20253U			89297.82071484	-.000000151		10000-3 0	308	
2	20253	4.9623	305.4801	0000923	168.9189	190.8448	1.00282052	290	
1989 077B									
1	20254U			89308.19001358	0.00062423	20971-4	18788-2 0	713	
2	20254	28.4380	302.8752	7197554	205.0331	88.2559	2.43068192	977	
Molniya1-76									
1	20255U			89299.19849953	0.000000322		38808-2 0	377	
2	20255	62.8121	171.5444	7355952	288.2454	9.5519	2.00644502	609	
1989 078B									
1	20256U			89299.23374591	0.13799275	42989-4	24516-3 0	740	
2	20256	62.8052	66.9312	0025738	121.7385	238.1190	16.44993496	4529	
1989 078C									
1	20257U			89297.30600474	0.23904803	43496-4	39607-3 0	713	
2	20257	62.8096	74.5113	0025323	105.0164	255.8269	16.45472312	4222	
1989 078D									
1	20258U			89296.85282225	0.000000291		74449-3 0	167	

2	20258	62.7893	171.7169	7312708	288.1735	9.8142	2.06171125	557
Cosmos 2046								
1	20259U		89309.33398098	0.00051591			84830-3 0	863
2	20259	65.0317	155.7802	0010206	269.2528	90.5822	15.52019226	6008
InterCos 24								
1	20261U		89308.75277529	0.00002087			65514-3 0	1018
2	20261	82.5973	10.9293	1263681	125.3260	247.2505	12.42632663	4708
1989 080C								
1	20262U		89300.05301050	0.00001969			61710-3 0	449
2	20262	82.6012	16.4356	1263811	144.9220	224.2128	12.42664468	3627
Gorizont 19								
1	20263U		89306.38348734	-.00000255			10000-3 0	468
2	20263	1.3488	276.1628	0000941	291.1377	69.4080	1.00270678	362
1989 081D								
1	20266U		89303.29822252	-.00000247			10000-3 0	124
2	20266	1.3838	275.7338	0032692	309.0460	50.2639	1.00602746	348
Cosmos 2047								
1	20279U		89310.76872715	0.00613255	28014-4	40057-3 0		1097
2	20279	67.1087	107.3777	0111367	114.7908	246.4328	16.04424667	5512
Maigon-2								
1	20281U		89310.76417779	0.00003012			94189-3 0	981
2	20281	82.5962	9.6494	1264212	120.7953	252.3459	12.42713547	4958
1989 083C								
1	20294U		89290.96417205	0.01408787	14751-2	14558-2 0		24
2	20294	62.8044	169.4304	0008886	259.8309	100.1383	16.10636997	66
1989 084C								
1	20299U		89310.84758569	0.00003916			22602-2 0	213
2	20299	34.2169	139.4423	7092244	13.5616	358.4979	2.49573875	471
GPS-0016								
1	20302U		89309.49302046	-.00000031			10000-3 0	139
2	20302	54.7810	326.1755	0036651	303.3524	56.3338	2.00576127	260
1989 085B								
1	20303U		89308.58152003	0.00004179			54855-3 0	137
2	20303	35.6487	243.3219	0338648	211.7520	146.2377	14.47184599	2056
1989 085C								
1	20304U		89310.14093603	0.00191448	12729-4	20836-2 0		349
2	20304	37.6947	312.2100	6020058	212.0139	90.4079	4.11638427	651
Meteor 3-3								
1	20305U		89306.78155603	0.00000770			20168-2 0	152
2	20305	82.5577	17.6866	0016296	169.5569	190.5893	13.15843177	1179
1989 086B								
1	20306U		89308.90895912	0.00003178			83495-2 0	194
2	20306	82.5569	16.1812	0016745	165.2922	194.8206	13.16053116	1454
1989 087A								
1	20315U		89310.97494587	-.00000220			10000-3 0	84
2	20315	0.0499	58.6773	0013176	203.8960	97.3802	1.00278232	67
1989 087B								
1	20316U		89310.82407839	0.00006808			50316-2 0	94

2 20316 7.0645 192.3614 7264045 187.1432 146.0527 2.27478412 233  
1989 070C

1 20317U 89309.16052548 -.000000133 10000-3 0 30

2 20317 1.6194 288.0919 0235354 230.2160 127.3592 0.98765592 87

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Dr TS Kelso Asst Professor of Space Operations  
tkelso@blackbird.afit.af.mil Air Force Institute of Technology

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